

20 November 2016, Telementor

Short session in Perseus and Taurus

Telescope: **Telementor** (Zeiss C63/840 mm)

Eyepieces:

O-40 - CZJ O-40, f=40mm, (21×, 2.0°)

TMB16 - TMB Mono 16, f=16mm, (53×, 35')

BGO9 - Baader Genuine Ortho, f=9mm, (93×, 27')

XO5 - Pentax XO5, f=5.1mm, (165×, 16')

Time: 2016/11/20 19:40-20:40UT

Location: Říčany

Weather: Medium transparency with strong humidity and quickly moving cirrus clouds.

Accessories: Baader 1.25" zenith prism

I was not feeling well during the weekend. Taking care of three kids alone during Sunday cost me also some energy. Add strong humidity, combined with thick, quickly moving cirrus clouds and you have more than enough excuses for staying at home. If your telescope is easy to set up and is joy to use as my Telementor, the evening can be still saved.

I decided to go out just for a short DSO session as I had no opportunity to be under the stars for more than a month. I wanted to have the night as much equipment hassle free as possible and I took out just three eyepieces. For a change I picked up those that are not in my regular eyepiece workhorse box - CZJ 40mm ortho, TMB monocentric 16mm, and Baader Genuine ortho 9mm. I should had known myself better, I went home to pick up during the session one more eyepiece, Pentax XO5, as I wanted to check one target at higher magnification.

I had no observing plan as is my usual habit. When I got out and saw Pleiades well placed in the clearest part of the sky, the first target was settled down. This was my first view of **M45** in the season which is very special every year. The cluster was nicely framed in the 40mm ortho two degree field of view. I could see nebular halos around bright stars. Hard to say if it was nebulosity or not. With careful look, I saw many thin dark lines in the background, revealing the presence of faint nebulosity that must have



been everywhere but which I was not able to notice directly.

Since this was intended as a short session only, I decided to stay in the area. The first target I wanted to check in Telementor was **NGC 1333**. Look at the deep images on internet, or at my humble image on this page. There is a huge molecular cloud with Herbig-Haro objects, many dark nebulae and several reflection nebulae, one of which is NGC 1333. So far, the smallest

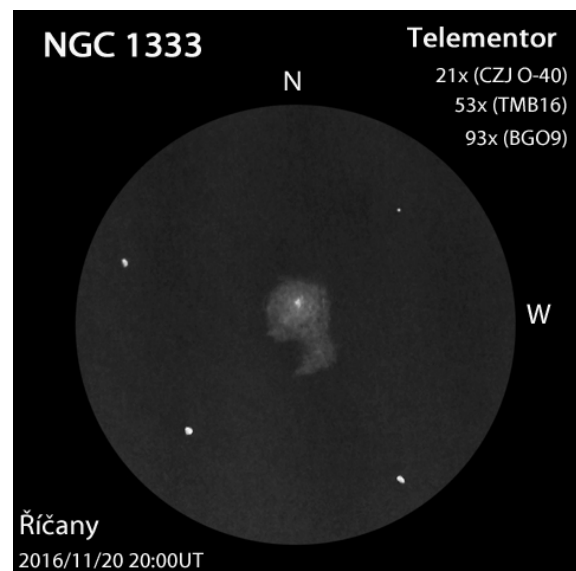
telescope I observed this nebula was 80mm refractor.

I learnt this night that NGC 1333 was very fine object even for 63mm telescope. I could noticed it with concentrated averted vision already at 21× as a faint halo around faint star. Nebula takes magnification very well. Power of 53× showed not only relatively bright halo around the central star. With averted vision, I could glimpse quite long tip pointing to a brighter star at south. Even 93× was still fine, the nebula looked more patchy and the tip was wider at its end, see the attached quick sketch.

North-west of the nebula, I suspected several times a possible star. It was nothing than just very short sparkles and unconscious feeling that there was something. Images show only one faint star in the area, otherwise the place is quite empty. It could not be anything else, either this star or just my imagination. However, the star has visual magnitude of $V = 14.015$, well below what I was able to see so far through the 63mm lens and I'm little sceptical that what I saw was this star.

If you are still in doubt about NGC 1333 being appropriate target for a 60mm class telescope then may be the fact that the nebula was discovered with just 78mm refractor would convince you. It was in 1855 by Eduard Schönfeld. He was using the Fraunhofer comet-seeker just at power of 10× for the work on Booner Durchmusterung star catalog. An independent discovery came one year later from Horace Tuttle, again using 3in refractor.

Then, I checked nearby open cluster **IC 348**. This is a very young, just 2 million years old cluster still embedded in nebulosity. Alas, not much from its photographic beauty was visible in 63mm. At 21×, there was just a pair of brighter stars, nothing that would resemble an open cluster. But not all was lost. A jump to 53× revealed a presence of one additional fainter star. Several very faint stars were showing for short moments with averted vision. It was a nice sparkling effect. I could count at least ten very faint stars at 93× and the



object started to look finally a little bit as a star cluster. I estimated its size to 10'. I also noticed that the brightest star was nice wide double star. I found that the pair is known under the name $\Sigma 439$.

The next stop was large planetary nebula **NGC 1514**. I could see only the central star at 21×. At 53×, the nebula was there with no doubts. The best view was coming through 9mm eyepiece (93×). It was not hard to see with averted vision a nebular disc around quite bright central star. It looked slightly elongated and there seemed to be some large irregular, ill-defined brighter patches in it. I estimated the size to 2-2.5'. Definitely an object for further and dedicated study.

Later at home, I was quite surprised about O'Meara's difficulties with spotting the nebula in four inch refractor under Hawaiian skies. In his book *The Secret Deep*, he writes that he needed five inch refractor to clearly see the nebula. Yet, I could see NGC 1514 relatively easily from our light polluted backyard just in 63mm refractor without an add from filters.

Next target was California Nebula **NGC 1499**. It did not fit entirely the field of view of O-40 eyepiece. There were no sharp edges and the shape was not well defined. Still, the nebulosity was clearly there. There was definitely a brighter background, elongated and running in E-W

direction. There were even several darker stripes running in the same direction. I was too lazy to go home for H β filter to confirm the presence of nebula. It seems like another excellent candidate for later study.

The last target was a tiny planetary nebula **IC 351**, so far observed through 100mm refractor only. I was surprised to see hints of it already at 21 \times . It looked like a misty very faint star. The view was much clearer at 53 \times and 93 \times . Still, I could not see anything else than this slightly misty star. At this point I went home for 5.1mm Pentax. It turned out to be useless for this target. It was very difficult to look through the eyepiece in a telescope with hand driven mount. Many times I was not even sure I was looking into it as there was no brighter star in the field of view. With some heavy fight, I could see the nearby faint star, however the nebula never showed up.

A few quick enjoyable views on Auriga clusters followed and it was time to pack the telescope. One hour run and I did not want to push my luck staying outside longer.

This was my *typical* DSO backyard session. Nothing special, still it was quite satisfactory night at the end. I'm actually surprised that this small telescope is still able to provide interesting enough views to me, even after four years of extensive use.

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